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| 10/038,998 | 01/05/2002 | Randy J. King | C17767/127288 | 7470 |

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| EXAMINER |
|---|
| JONES III, CLYDE H |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2623 | |

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/038,998 | KING ET AL. | |
| | Examiner | Art Unit | |
| | Clyde H. Jones III | 2623 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *1/18/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### Response to Arguments

1. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's arguments on pages 7-9 of the 1/18/2006 amendment, the newly added limitations are met by the Chen, Illiasevitch and Damitio et al. references as described below.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 5, 7 and 9 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "in a frequency range of 400 MHz" in claims 1, 5, 7 and 9 uses relative language which renders the claim indefinite. The phrase "in a frequency range of 400 MHz" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The Examiner cannot ascertain the

metes and bounds of the claim, e.g., is 400 MHz the max, or the min of the range, or is 300 MHz in the range, etc?

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 5,978,389), Illiasevitch (US 6,380,644 B1), Damitio et al. (US 6,504,419 B1), and Sakaguchi (US 6,448,951 B1).

Regarding claims 1, 7, and 9 Chen teaches–

a video switch (30 - Fig. 3 or 40 – Fig. 4A-4C) for switching/routing a video output (R, G, B outputs) of one of a plurality of computers (computers a-d) to a target video destination (monitor 36 – Fig. 3 or 46 – Fig. 4) in a KVM system, the video switch comprising:

a voltage converter having an input and an output (voltage amplifying circuit 3411 – Fig. 3 or 4411 – Fig. 4A), wherein a video select signal (S31, S32 – Fig. 3 or S41, S42 – Fig. 4) is operably connected (i.e., connected so the circuit is operable) to the input of the voltage converter; and

a discrete radio frequency switch (31, 32, 33 – Fig. 3 or 41, 42, 43 & D1-D12 – Fig. 4A-4C; col. 6, lines 17-18) having a control (37- Fig. 3 or 47 - Fig. 4), a video input (Ra-Rd, Ga-Gd, Ba-Bd) and a video output (monitor 36 - Fig. 3 or 46 - Fig. 4), wherein the video output of one of the plurality of computers is operably connected/multiplexed to the video input of the discrete radio frequency switch (col. 3, lines 31-40; col. 4, lines 35-47), wherein the output of the voltage converter is operably connected to the control of the discrete radio frequency switch (col. 3, lines 12-59).

Chen further teaches suitable transistors of high frequency can be used in place of the diode switches (and the more expensive IC video amplifiers) (col. 3, line 67 – col. 4, line 2). Chen even further teaches adjusting voltage/current gain to compensate for video signal attenuation based on monitoring distances (col. 6, lines 20-23). Lastly Chen discloses that a skillful person in the art can create many different variations without departing the spirit and scope of the disclosure (col. 6, lines 24-28).

However, Chen fails to disclose the newly added limitation capable of operating in a frequency range of 400 MHz for enabling the QXGA image resolution standard for the video output.

In an analogous art Illiasevitch teaches using semiconductor devices (transistors) to provide improved video switch performance at high frequencies providing suitable operation with analog and digital signals (col. 8, lines 42-66; col. 7, lines 59-62; col. 1, lines 19-24). Illiasevitch further teaches the characteristics of his system at very high frequencies, i.e., $\omega \rightarrow \infty$ (col. 5, lines 17-45).

It would be obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the system of Chen to include the use of semiconductor devices (e.g., depletion mode MOSFETs, MESFETs, etc.) as taught by Chen for the advantage of improving the quality and operability of the switch by ensuring high quality analog and digital video switching without gain deterioration and phase shift between output and input voltages (Illiasevitch- col. 8, lines 57-66).

However, Chen in view of Illiasevitch still fail to specifically disclose capable of operating in a frequency range of 400 MHz for enabling the QXGA image resolution standard for the video output.

In an analogous art Damitio teaches operating at 600 MHz for providing high speed signals to conventional/standard video outputs (col. 8, lines 8-17).

The selection of frequency range for any communication equipment is subject to the type of data transmitted, the type transmission medium, type of communication devices and regulations or restrictions by the FCC. For example, broadcast radio uses 530 Hz – 108 MHz to transmit music or sounds to your car radio over terrestrial antenna, NTSC over-air broadcast require 6Mhz bandwidths for transmission of video and proper reception of channels by a television device (on a range from 54 MHz to 806 MHz) and telephone communications require less than 3kHz operation frequency range over standard POTS, PSTN or twisted pair.

It would have been obvious to one of ordinary skill in the art at the time of the Applicants invention to modify Chen in view of Illiasevitch to include any frequency range such as 300 MHz, 400 MHz or 600 MHz, etc., since the selection of frequency

range for any communication equipment is subject to the type of data transmitted, the type transmission medium, type of communication devices and regulations or restrictions by the FCC.

Furthermore, it would have been obvious to one of ordinary skill in the art to modify Chen in view of Illiasevitch to include any frequency range such as 400 MHz, since applicant has not disclosed that operating in this specific frequency range solves any stated problem or is for any particular purpose and it appears that the system would operate or perform equally well in the operating frequency range of 300 or 600 MHz.

Moreover, since the claim calls for a range of "400MHz" which is indefinite (in view of the 35 USC 112 rejections described above), the examiner considers the 600 MHz taught by the Damitio reference to be in the range of 400 MHz for enabling the standard for a video output. It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the system of Chen and Illiasevitch to include the limitations discussed above for the advantage of increasing system compatibility by enabling playback of high frequency signals into monitors of conventional impedance (Damitio - col. 8, lines 14-17).

However, Chen in view of Illiasevitch and Damitio fail to disclose the further limitation QXGA image resolution.

In an analogous art Sakaguchi teaches XGA to QXGA standards for providing for delivering high resolution images to display (col. 7, lines 3-12).

It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the system of Chen in view of Illiasevitch and Damitio to

include QXGA image resolution as taught by Sakaguchi for the advantage of providing a more compatible high speed video switch that can provide resolution in accordance with a well known standard.

Regarding claims 2 and 3, Chen in view of Illiasevitch, Damitio, and Sakaguchi teach the voltage converter comprises a resistor divider operably connected to a logic device (Chen - col. 4, lines 36-58 & Fig. 4A; in which the voltage amplifying circuit comprises a voltage divider RH and RL, or R9 and R10, to provide a voltage bias for which the diode switches (diodes D1–D4) can compare to control signals Ca-Cd to determine which video signal should be selected to be input to the next section, e.g., the anodes of diodes D1-D4 are biased around 1.8 V and Cb is at 0 volts while the other control signals are +5 volts, therefore the diode D2 detects a forward bias on the Rb line and allows signal Rb to conduct to the next section; as to the further limitation "comparator" or "logic device", it reads on Chen's diode switch which compares two voltages and switches its output to indicate which is larger).

Regarding claims 4 and 8, Chen in view of Illiasevitch, Damitio, and Sakaguchi teach the discrete radio frequency switch is a depletion mode MOSFET device (Illiasevitch, col. 7, lines 59-62; col. 2, lines 57-60).

In regards to claim 6, Chen in view of Illiasevitch, Damitio, and Sakaguchi teach the video output is operably connected to a peaking video amplifier circuit (3411- Fig. 3

or 4411 – Fig. 4; col. 5, lines 18-45; col. 6, lines 7-16; which reads on "peaking amplifier", in which circuit 3411 or 4411 amplifies the video signals in order to compensate for high frequency transmission attenuation or distortion).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 5,978,389), Illiasevitch (US 6,380,644 B1), Damitio et al. (US 6,504,419 B1), Sakaguchi (US 6,448,951 B1) and Matsubara et al. (US 2003/0001966 A1).

In regards to claim 5, Chen teaches-

A video switch (30 - Fig. 3 or 40 – Fig. 4A-4C) for switching a video output (R, G, B outputs) of one of a plurality of computers (computer a-d) to a target video destination (monitor 36 – Fig. 3 or 46 – Fig. 4), the video switch comprising:

a first logic gate (inherently inside 37 – Fig. 3 or 47 – Fig. 4A-4C) having a video control input (S31, S32 – Fig. 3 or S41, S42 – Fig. 4), and a control output (Ca, Cb, Cc or Cd), the control output of the first logic gate having a first voltage level (0 or +5 volts) (col. 4, lines 36-47; col. 3, lines 33-35; in which Chen discloses a decoder control signal generating circuit, i.e., a n-to-2n decoder which inherently uses combinational logic, e.g., a plurality of AND, OR, NOR, NAND, or NOT gates, etc., to convert the coded inputs, i.e., S31, S32 or S41, S42, into the decoded outputs, i.e., Ca, Cb, Cc or Cd, as disclosed);

a resistor divider network operably coupled to the control output of the first logic gate (col. 4, lines 36-58 & Fig. 4A; in which voltage divider RH and RL, and R9 and

R10, provide a voltage bias for which the diode switches (diodes D1–D4) can compare to the control output signals Ca-Cd to determine which video signal should be selected to be conducted to the next section, e.g., the anodes of diodes D1-D4 are biased around 1.8 V and first output Cb is at 0 volts (when it is selected by S41 & S42 or S31 & S32) while the other control signals are +5 volts, therefore the diode D2 detects a forward bias and allows only the Rb line to conduct to the next section);

a second logic gate (inherently inside 37 – Fig. 3 or 47 – Fig. 4A-4C) operably coupled to the resistor divider network, the second logic gate having a control output, the control output of the second logic gate having a second voltage level (reads on a second output voltage (0 or +5 volts) of the plurality of outputs being generated from a second logic gate (of the plurality of logic gates inherently disclosed inside 37 or 47 as described above) being compared to the bias voltage provided by the resistor divider, e.g., the video select signals make 37 or 47 output 0 volts for a first output Cb and +5 volts for a second output Ca, thereby causing video signal b to conduct while video signal a doesn't conduct);

a discrete radio frequency switch (31, 32, 33 – Fig. 3 or 41, 42, 43 & D1-D12 – Fig. 4A-4C; col. 6, lines 17-18) having a control (37- Fig.3 or 47-Fig. 4), a video input (Ra-Rd, Ga-Gd, Ba-Bd) and a video output (monitor 36 - Fig. 3 or 46 - Fig. 4), wherein the video output of one of the plurality of computers is operably connected to the video input of the discrete radio frequency switch (col. 3, lines 31-40), wherein the control output of the second logic gate (Ca continuing from the previous example) is operably connected to the control of the discrete radio frequency switch (e.g. control output Ca of

the inherently disclosed second logic gate, is operably connected to control the conduction of video signal a through select diodes in the diode switch).

Chen further teaches suitable transistors of high frequency can be used in place of the diode switches (and the more expensive IC video amplifiers) (col. 3, line 67 – col. 4, line 2). Chen even further teaches adjusting voltage/current gain to compensate for video signal attenuation based on monitoring distances (col. 6, lines 20-23). Lastly Chen discloses that a skillful person in the art can create many different variations without departing the spirit and scope of the disclosure (col. 6, lines 24-28).

However, Chen fails to disclose the further limitation "OSD control input and the newly added limitation capable of operating in a frequency range of 400 MHz for enabling the QXGA image resolution standard for the video output.

In an analogous art Matsubara discloses an "OSD control input" ("command") (Fig. 4; Fig. 5; pg. 6, par. 90, line 7 – par. 92, line 7; in which Matsubara discloses the OSD control input/command is used to generate an OSD screen corresponding to the selected computer upon activation of selection/operation switch 8 – Fig. 4, e.g. a user activates switch 8 to switch from computer 2A to computer 2B and an OSD screen is switched to, i.e., displayed, corresponding to the user's selection).

It would have been obvious to one skilled in the art at the time the invention was made to modify the system of Chen to include the limitation "OSD control input" as taught by Matsubara to provide information to the user regarding what video signal of the plurality of computers is active, i.e., currently displayed.

However, Chen in view of Matsubara fail to disclose the newly added limitation capable of operating in a frequency range of 400 MHz for enabling the QXGA image resolution standard for the video on the target monitor.

In an analogous art Illiasevitch teaches using semiconductor devices (transistors) to provide improved video switch performance at high frequencies providing suitable operation with analog and digital signals (col. 8, lines 42-66; col. 7, lines 59-62; col. 1, lines 19-24). Illiasevitch further teaches the characteristics of his system at very high frequencies, i.e., $\omega \rightarrow \infty$ (col. 5, lines 17-45).

It would be obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the system of Chen in view of Matsubara to include the use of semiconductor devices (e.g., depletion mode MOSFETs, MESFETs, etc.) as taught by Chen for the advantage of improving the quality and operability of the switch by ensuring high quality analog and digital video switching without gain deterioration and phase shift between output and input voltages (Illiasevitch- col. 8, lines 57-66).

However, Chen in view of Matsubara and Illiasevitch still fail to specifically disclose capable of operating in a frequency range of 400 MHz for enabling the QXGA image resolution standard for the video output.

In an analogous art Damitio teaches operating at 600 MHz for providing high speed signals to conventional/standard video outputs (col. 8, lines 8-17).

The selection of frequency range for any communication equipment is subject to the type of data transmitted, the type transmission medium, type of communication devices and regulations or restrictions by the FCC. For example, broadcast radio uses

530 Hz – 108 MHz to transmit music or sounds to your car radio over terrestrial antenna, NTSC over-air broadcast require 6Mhz bandwidths for transmission of video and proper reception of channels by a television device (on a range from 54 MHz to 806 MHz) and telephone communications require less than 3kHz operation frequency range over standard POTS, PSTN or twisted pair.

It would have been obvious to one of ordinary skill in the art at the time of the Applicants invention to modify Chen in view of Matsubara and Illiasevitch to include any frequency range such as 300 MHz, 400 MHz or 600 MHz, etc., since the selection of frequency range for any communication equipment is subject to the type of data transmitted, the type transmission medium, type of communication devices and regulations or restrictions by the FCC.

Furthermore, it would have been obvious to one of ordinary skill in the art to modify Chen in view of Matsubara and Illiasevitch to include any frequency range such as 400 MHz, since applicant has not disclosed that operating in this specific frequency range solves any stated problem or is for any particular purpose and it appears that the system would operate or perform equally well in the operating frequency range of 300 or 600 MHz.

Moreover, since the claim calls for a range of "400MHz" which is indefinite (in view of the 35 USC 112 rejections described above), the examiner considers the 600 MHz taught by the Damitio reference to be in the range of 400 MHz for enabling the standard for a video output. It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the system of Chen in view of

Matsubara and Illiasevitch to include the limitations discussed above for the advantage of increasing system compatibility by enabling playback of high frequency signals into monitors of conventional impedance (Damitio - col. 8, lines 14-17).

However, Chen in view of Matsubara, Illiasevitch and Damitio fail to disclose the further limitation QXGA image resolution.

In an analogous art Sakaguchi teaches XGA to QXGA standards for providing for delivering high resolution images to display (col. 7, lines 3-12).

It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the system of Chen in view of Matsubara, Illiasevitch and Damitio to include QXGA image resolution as taught by Sakaguchi for the advantage of providing a more compatible high speed video switch that can provide resolution in accordance with a well known standard.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clyde H. Jones III whose telephone number is 571-272-5946. The examiner can normally be reached on 10a-6:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

***Note to Applicant***

Art Units 2611, 2614 and 2617 have changed to 2623. Please make all future correspondence indicate the new designation 2623.

CJ

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